

Abstract of the Disclosure

RAIL PRESSURE SAMPLING BEFORE FUEL INJECTION EVENTS

In common rail fuel injection systems, a sensed rail pressure is used to determine control signals to produce desired injection characteristics. Because rail pressure fluctuates, especially during cold start procedures, and because the rail pressure must be sensed before the injection event to be controlled, the accuracy of the timing and quantity of the injection event can be compromised if the rail pressure at the start of the injection event is different from the sensed rail pressure. In order to produce more accurate fuel injection characteristics, the rail pressure is sensed after the end of control signal for an immediately preceding injection event but at least a predetermined time before the start of control signal for a succeeding injection event. Since the rail pressure is sensed close in time to the succeeding injection event but with adequate time to do control signal determination calculations, the accuracy in quantity and timing of the succeeding injection event can be improved because the quality of the sensed rail pressure is improved.

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